

## **Bladder diverticula**

*Epithelial lined pouch arising from a hollow viscus*

Bladder diverticula represent herniations of bladder mucosa through muscularis propria – therefore only three layers, mucosa, lamina propria, adventitia

Common

Congenital or acquired

Congenital

Solitary

Almost exclusively boys vs. girls

Typically < 10 years old

Usually lateral and posterior to ureteric orifice – thought to be due to weakness in bladder wall – may be bilateral

Large diverticula at dome a/w prune belly syndrome. Also more common in Ehlers-Danlos syndrome

No association with bladder outflow obstruction

Acquired

Usually a/w BOO or neurogenic LUTD

Typically multiple

Variable location within bladder although most common at uterovesical hiatus

Usually a/w trabeculation and sacculation

NB. Hutch diverticulum contains UO in base

## Presentation

**Typically asymptomatic**

UTI

Incomplete emptying

Haematuria

Abdominal pain

Palpable mass

Malignant transformation

Natural history unknown

Surveillance generally recommended

Usually TCC in 70-80% cases; SCC for remainder

Theoretical risk of early metastasis in diverticula – MRI recommended in all patients for local staging

## Imaging

USS

Cystoscopy

Voiding cystography

Very high rate of reflux (> 90%) seen in association with congenital bladder diverticula

CT/MRI

Urodynamics

Define contribution of BOO

Upper tract

Medial deviation of ureters most common

Excludes hydroureteronephrosis

Management

General rationale:

- Exclude malignancy
- Exclude upper tract dilatation
- Identify and treat bladder outflow obstruction
- Survey diverticulum in asymptomatic population\*
  - Cystoscopic surveillance
  - CISC for compliant individuals
- Consider diverticulectomy for symptoms\* (either at same time of after BOO surgery)
  - Storage symptoms
  - Recurrent UTIs
  - Obstruction
  - Stones
  - ? Ipsilateral VUR

Surgical intervention

Endoscopic incision

Unfit patients

Incision/resection of diverticular neck

Converts tight-neck to broad-neck

Can precipitate acute urinary retention

Transvesical diverticulectomy

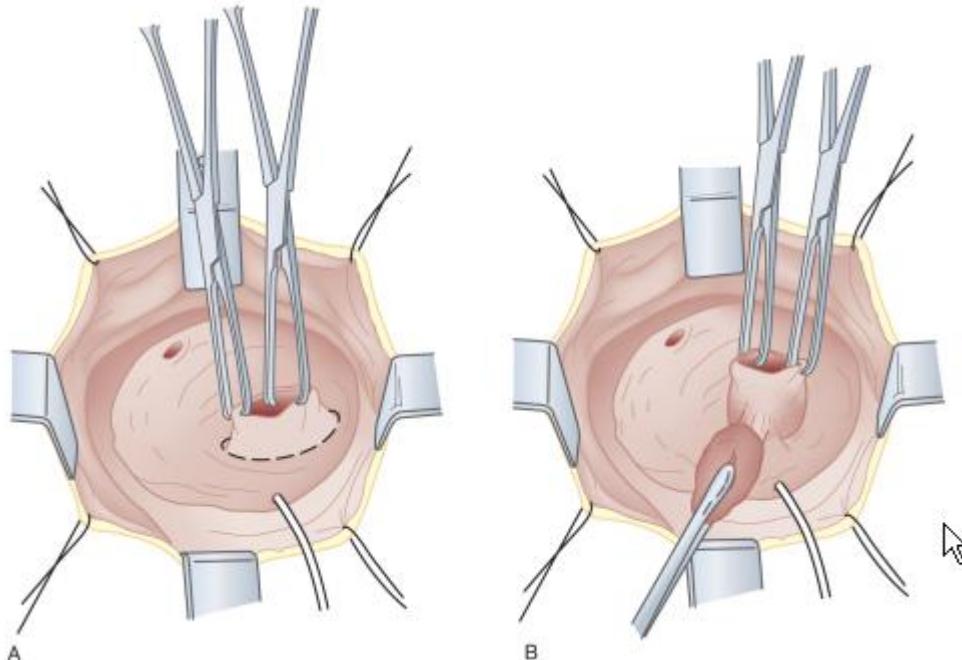
Hugh Hampton Young 1906

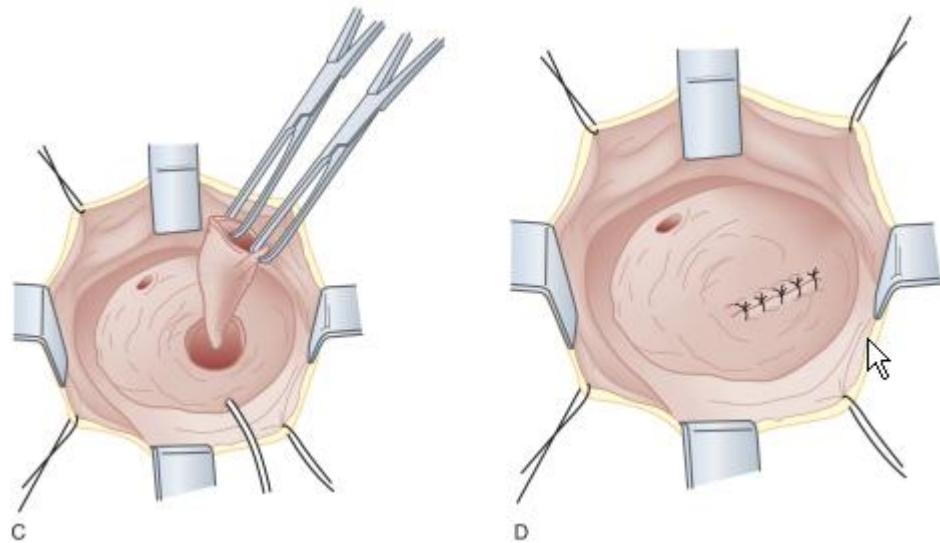
Anterior cystotomy

Provided no adhesions, entire diverticulum can be everted into bladder and excised

2 layer closure bladder wall

Care must be taken to avoid ureter





Laparoscopic/open diverticulectomy

Combined intravesical/extravesical approach for large or tethered diverticula